

WHAT IS CLAIMED IS:

1. A process of forming a protection layer with an improved level of gloss on top of a thermal dye transfer image comprising:

(a) imagewise heating a dye-donor element comprising a support having thereon a dye layer comprising an image dye in a binder, said dye donor being in contact with a dye-receiving element, thereby transferring a dye image to said dye-receiving element at a line time of 0.4 to 2 milliseconds to form said dye transfer image; and

(b) non-imagewise heating a donor element, which may be the same as the dye-donor element or a separate donor-element, which donor element comprises a support and a protection layer, thereby thermally transferring the protection layer on top of said transferred dye image at a line time of 0.4 to 2 milliseconds,

wherein a means for stripping the protection layer from the donor element is adjusted so that the distance the donor element and receiver travel before peeling is preselected such that the time from printing of a line to peeling of the line, when the donor substrate is separated from the protection layer adhered to said printed dye-receiving element, is 68.21 to 69.00 milliseconds.

2. The process of claim 1 wherein the time from printing of a line to peeling of the line, when the support of the donor element is separated from the protection layer adhered to said dye-receiving element is preferably 68.25 to 68.75 milliseconds.

3. The process of claim 1 wherein an angle between donor element and dye-receiving element is present at time of peeling is 1.19 degrees to 2.39 degrees.

4. The process of claim 1 wherein the line times in both (a) and (b) is preferably less than 1.4 milliseconds and an angle is present between donor element and thermal print at time of peeling that is between 0 and 32.14 degrees.

5. The process of claim 1 wherein the Tg of the surface material on the protection layer in contact with the thermal print is in the range of 100 to 125°C.

6. The process of claim 1 wherein the Tg of the surface material on the protection layer in contact with the print is below 120°C, preferably 110 to 120°C.

7. The process of claim 1 wherein the protective layer is heated by a thermal print head at a temperature of 130 to 150°C.

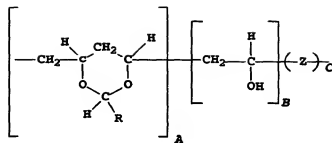
8. The process of claim 1 wherein the thermal print has a gloss level of at least 70.

9. The process of claim 1 wherein said means for stripping the protection layer from the dye-donor element is a printer stripper plate.

10. The process of claim 9 wherein the printer stripper plate is connected directly to a thermal head heat sink or a thermal print head compression plate.

11. The process of claim 1 wherein a single thermal print head is used in (a) and (b).

12. The process of claim 1 wherein at least the surface material of said protection layer comprises a polymer represented by the following structure:



wherein:

R is H, CH₃ or C₆H₅;

A is at least about 25 mole percent;

B is from about 5 to about 75 mole percent;

Z is another monomer different from A and B such as vinyl acetate, vinyl chloride, styrene, methyl methacrylate, butyl acrylate, isopropyl acrylamide, and acrylate ionomer;

A+B is at least about 65 mole percent; and

A+B+C=100.

13. The process of claim 1 wherein at least the surface material of said protection layer comprises a polymer selected from the group consisting of poly(vinyl formal), poly(vinyl benzal) or poly(vinyl acetal) containing at least about 5 mole % hydroxyl, poly(vinyl)butyral, and poly(methylmethacrylate), and combinations thereof.

14. The process of claim 13 wherein at least the surface material of said protection layer comprises poly(vinyl acetal).

15. The process of claim 1 wherein said dye-donor element is a multicolor element comprising repeating color patches of yellow, magenta and cyan image dyes, respectively, dispersed in a binder, and a patch containing said protection layer.

16. The process of claim 1 wherein separate thermal print heads are employed for imagewise heating in step (a) and non-imagewise heating in step (b).

17. The process of claim 16 wherein a plurality of separate thermal print heads are employed for imagewise heating, respectively, a plurality of color patches in step (a).